

What is claimed is:

1. A method of ordering visual objects presented on a display comprising:
comparing visual objects to be placed in an overlapping condition;
5 determining from the comparison the order in which said visual objects
are to be placed; and
re-ordering and placing the visual objects in said overlapping condition
in accordance with said determination.
- 10 2. The method of claim 1 wherein during said comparing, a metric of each
visual object is compared to determine a relative size of each said visual object.
3. The method of claim 2 wherein during said determining, visual objects
are placed in order from smallest to largest with smaller visual objects being placed
15 in front of larger visual objects.
4. The method of claim 3 wherein said metric is the area of a rectangular
region surrounding each visual object.
- 20 5. The method of claim 1 wherein said comparing, determining and re-
ordering are performed automatically when a visual object is brought into an
overlapping condition with another visual object during visual object manipulation.
6. The method of claim 5 wherein during said comparing, a metric of each
25 visual object is compared to determine a relative size of each said visual object.
7. The method of claim 6 wherein during said determining, visual objects
are placed in order from smallest to largest with smaller visual objects being placed
in front of larger visual objects.
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8. The method of claim 1 wherein said comparing, determining and re-ordering are performed automatically when a visual object is brought into an overlapping condition with another visual object during visual object manipulation and then released.
9. The method of claim 8 wherein during said comparing, a metric of each visual object is compared to determine a relative size of each said visual object.
10. The method of claim 9 wherein during said determining, visual objects are placed in order from smallest to largest with smaller visual objects being placed in front of larger visual objects.
11. The method of claim 1 wherein said comparing, determining and re-ordering are performed in response to a user input command.
12. The method of claim 11 wherein during said comparing, a metric of each visual object is compared to determine a relative size of each said visual object.
13. The method of claim 12 wherein during said determining, visual objects are placed in order from smallest to largest with smaller visual objects being placed in front of larger visual objects.
14. A method of creating a connecting link between source and destination visual objects comprising:
determining a region within each visual object to be joined and a connecting path extending between the regions;
clipping the connecting path so that the connecting path terminates at the locations where the connecting path intersects the source and destination visual objects; and
extending a connecting link between the source and destination visual objects terminating at said locations.

15. The method of claim 14 wherein said region is a point within each visual object.

5 16. The method of claim 15 wherein said point is the center of each visual object.

17. The method of claim 16 wherein said connecting path is a straight line and wherein during said clipping, said straight line is traversed to determine the
10 locations where said connecting path intersects said source and destination visual objects.

18. The method of claim 16 wherein said connecting path is a curved line and wherein during said clipping, said curved line is flattened and represented by a
15 series of straight line segments, each straight line segment being traversed to determine the locations where said connecting path intersects said source and destination visual objects.

19. The method of claim 16 wherein said connecting path is a self-loop and wherein during said clipping, said self-loop is traversed in clockwise and anti-
20 clockwise directions to determine the locations where said connecting path intersects said source and destination visual objects.

20. The method of claim 17 further comprising placing an arrowhead on at
25 least one end of said connecting link, said arrowhead having a tip terminating at said location, said connecting link terminating at a backend of said arrowhead.

21. The method of claim 20 further comprising placing an arrowhead at
30 each end of said connecting link.

22. The method of claim 20 wherein said connecting path is a straight line and wherein during said clipping, said straight line is traversed to determine the locations where said connecting path intersects said source and destination visual objects.

23. The method of claim 20 wherein said connecting path is a curved line and wherein during said clipping, said curved line is flattened and represented by a series of straight line segments, each straight line segment being traversed to determine the locations where said connecting path intersects said source and destination visual objects.

24. The method of claim 20 wherein said connecting path is a self-loop and wherein during said clipping, said self-loop is traversed in clockwise and anti-clockwise directions to determine the locations where said connecting path intersects said source and destination visual objects.

25. The method of claim 17 wherein said connecting link is represented by a plurality of spaced shapes.

26. The method of claim 25 wherein said shapes are generally evenly spaced along the length of said connecting path.

27. The method of claim 26 wherein the shapes along said connecting path are the same.

28. The method of claim 26 wherein the shapes along said connecting path are different.

29. The method of claim 25 wherein said shapes provide semantic meaning to the connecting link joining said visual objects.

30. The method of claim 29 wherein said connecting path is a straight line and wherein during said clipping, said straight line is traversed to determine the locations where said connecting path intersects said source and destination visual objects.

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31. The method of claim 29 wherein said connecting path is a curved line and wherein during said clipping, said curved line is flattened and represented by a series of straight line segments, each straight line segment being traversed to determine the locations where said connecting path intersects said source and destination visual objects.

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32. The method of claim 29 wherein said connecting path is a self-loop and wherein during said clipping, said self-loop is traversed in clockwise and anti-clockwise directions to determine the locations where said connecting path intersects said source and destination visual objects.

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33. A method of creating a connecting link joining source and destination visual objects comprising:

determining a path for said connecting link between said source and destination visual objects; and
representing said connecting link by at least one non-line shape.

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34. The method of claim 33 wherein said shape provides information concerning the relationship between said source and destination visual objects.

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35. The method of claim 34 wherein said connecting link is represented by a plurality of spaced shapes.

36. The method of claim 35 wherein said shapes are generally evenly spaced.

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37. The method of claim 35 wherein said shapes are the same.

38. The method of claim 35 wherein said shapes are different.
39. The method of claim 36 further comprising reorienting the shapes into a generally upright orientation if the shapes become inverted during manipulation of one or more of said source and destination visual objects.
40. The method of claim 36 wherein said shapes are generally centered along said path.
41. The method of claim 40 wherein said shapes are the same.
42. The method of claim 40 wherein said shapes are different.
43. The method of claim 40 further comprising reorienting the shapes into a generally upright orientation if the shapes become inverted during manipulation of one or more of said source and destination visual objects.
44. An overlapping object tool for ordering visual objects presented on a display comprising:
means for comparing visual objects to be placed in an overlapping condition;
means for determining the order in which said visual objects are to be placed based on said comparison; and
means for re-ordering and placing the visual objects in said overlapping condition in accordance with said determination.
45. An overlapping object tool according to claim 44 wherein said comparing means compares a metric of each visual object to determine a relative size of each said visual object.
46. An overlapping object tool according to claim 45 wherein said determining means places visual objects in order from smallest to largest with smaller visual objects being placed in front of larger visual objects.

47. An overlapping object tool according to claim 46 wherein said metric is the area of a rectangular region surrounding each visual object.

5 48. An object-connecting tool for creating a connecting link between source and destination visual objects comprising:

means for determining a region within each visual object to be joined and a connecting path extending between the regions;

10 means for clipping the connecting path so that the connecting path terminates at the locations where the connecting path intersects the source and destination visual objects; and

means for extending a connecting link between the source and destination visual objects terminating at said locations.

15 49. An object-connecting tool according to claim 48 wherein said region is a point within each visual object.

50. An object-connecting tool according to claim 49 wherein said point is the center of each visual object.

20 51. An object-connecting tool according to claim 50 wherein said connecting path is a straight line and wherein said clipping means traverses said straight line to determine the locations where said connecting path intersects said source and destination visual objects.

25 52. An object-connecting tool according to claim 50 wherein said connecting path is a curved line and wherein said clipping means flattens said curved line into a series of straight line segments, each straight line segment being traversed to determine the locations where said connecting path intersects said
30 source and destination visual objects.

53. An object-connecting tool according to claim 50 wherein said connecting path is a self-loop and wherein said clipping means traverses said self-loop in clockwise and anti-clockwise directions to determine the locations where said connecting path intersects said source and destination visual objects.
54. An object-connecting tool according to claim 50 wherein said connecting link is represented by a plurality of spaced shapes.
55. The method of claim 54 wherein said shapes are generally evenly spaced along the length of said connecting path.
56. An object-connecting tool for creating a connecting link joining source and destination visual objects comprising:
- means for determining a path for said connecting link between said source and destination visual objects; and
- means for representing said connecting link by at least one non-line shape.
57. An object-connecting tool according to claim 55 wherein said shape provides information concerning the relationship between said source and destination visual objects.
58. An object-connecting tool according to claim 56 wherein said connecting link is represented by a plurality of spaced shapes.
59. An object-connecting tool according to claim 57 wherein said shapes are generally evenly spaced.
60. A computer readable medium including a computer program for ordering visual objects presented on a display, said computer program comprising:
- computer program code for comparing visual objects to be placed in an overlapping condition;

computer program code for determining the order in which said visual objects are to be placed based on said comparison; and

computer program code for re-ordering and placing the visual objects in said overlapping condition in accordance with said determination.

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61. A computer readable medium including a computer program for creating a connecting link between source and destination visual objects, said computer program comprising:

10 computer program code for determining a region within each visual object to be joined and a connecting path extending between the regions;

computer program code for clipping the connecting path so that the connecting path terminates at the locations where the connecting path intersects the source and destination visual objects; and

15 computer program code for extending a connecting link between the source and destination visual objects terminating at said locations.

62. A computer readable medium including a computer program for creating a connecting link joining source and destination visual objects, said computer program comprising:

20 computer program code for determining a path for said connecting link between said source and destination visual objects; and

computer program code for representing said connecting link by at least one non-line shape.